

REMARKS

Applicants added claim 26 which includes substantially the same requirements as claims 7 and 15.

Applicants have amended the Specification to add the application serial numbers for the cross referenced applications and correct minor typographical errors.

The Examiner rejected pending claims 1-25 as obvious (35 U.S.C. §103) over Applicant admitted prior art in the Related Art section of the Application ("Related Art"). Applicants traverse these rejections for the following reasons.

Independent claims 1, 9, and 17 require transforming data in an input table in a database in a server in communication with a client. A transform command is received from the client indicating an input data table name in the database and at least one rule indicating at least one cell in the input table to transform and a transform operation to perform with respect to the at least one cell. A copy of the input table from the database is accessed and within the server data in the accessed input table is transformed according to each rule specified in the transform command.

In rejecting claims 1, 9, and 17, the Examiner recognized that the Related Art does not suggest the claimed step of receiving from the client a transform command indicating an input data table name and at least one rule indicating at least one cell in the input table to transform and a transform operation. (Office Action, pg. 3) After recognizing that the Related Art does not teach the claim requirements, the Examiner found that the Related Art teaches that in the prior art the data in the database is transferred from the server to the client so that the client can perform the transform and return the transformed data back to the server. (Application, pg. 3, lines 15-19) From this prior art, the Examiner concluded that it would have been obvious for a person of skill in the art to modify the Related Art with the step of receiving from the client a transform command indicating the input data table name and at least one rule as claimed. The Examiner justifies this finding on the grounds that such a modification would improve the accuracy and reliability of the transformation and provide an improved technique for transformation. (Office Action, pgs. 3-4)

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Applicants traverse this rejection because the Examiner has not cited any art that teaches or suggests his finding that it would have been obvious to modify the prior art to have the client send a transform command indicating an input data table name and at least one rule as claimed. According to the Manual of Patent Examination Procedure ("MPEP"), Eighth Edition, the "mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." (MPEP Sec., 2143.01, pg. 2100-124). For instance, in In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984), see also, MPEP 2143.01, the mere fact that the prior art device could have been turned upside down to produce the claimed device was not sufficient to render the claimed combination obvious. Here, the Examiner is proposing a modification that is nowhere suggested in the Related Art, i.e., that the transform command is received from the client so that the server can perform the transform operation indicated in the transform command.

Applicants further submit that the rationale the Examiner provides for modifying the prior art disclosed in the Related Art section to "improve the accuracy and the reliability of the method" and "provide an improved technique for transforming data in a database server" (Office Action, pg. 4) is too broad and general. First off, the Examiner has not explained how the proposed modification to the prior art discussed in the Related Art section would "improve the reliability and accuracy of the method", i.e., why is it more reliable and accurate to have the data transferred to the client for transformation (as done in the prior art) as opposed to having the client send a transform command to the server as claimed. Further, the second justification offered by the Examiner that the claimed invention is obvious because it is an "improved technique" is also too general and vague because as all patentable inventions are improved techniques. Moreover, the mere purpose of improving reliability and accuracy or providing an improved transformation, which is the rationale the Examiner provides, is too general to provide the justification to modify the cited art as the Examiner proposes because there are many ways the transformation processed could be made more accurate and reliable and improved. Thus, the Examiner's cited motivation of improving host performance does not compel one to conclude that the client should communicate a transform command as claimed.

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Indeed, the U.S. Court of Appeals for the Federal Circuit has cautioned against reliance on conclusory statements of motivation and suggestion to establish a prima facie case of obviousness.

it [the PTO Board] relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.

In re Rouffet, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998) (emphasis added).

Here, the Examiner's rationale is insufficient to justify the proposed modification to the prior art described in the Related Art section because the rationale does not compel one to make the proposed modification and the offered rationale, improving "accuracy and reliability" and providing an improved technique is too general and broad.

To further explain the inappropriateness of the Examiner's rejection, Applicants reference materials available at the U.S. Patent Office website that provide an example of an inappropriate obviousness rejection. See, "Formulating And Communicating Rejections Under 35 U.S.C. 103 For Applications Directed to Computer-implemented Business Method Inventions", [online], last modified February 7, 2001. [retrieved on August 7, 2001] Retrieved from Internet:<URL: <http://www.uspto.gov/web/menu/busmethp/busmeth103rej.htm>>. In Part V of this paper, Example 17 explains an improper obviousness rejection in a hypothetical case where each reference separately taught different limitations of the claim, but no reference suggested combining these elements together. In this hypothetical improper rejection, a recitation of general motivation was improperly used to justify combining the teachings of the references even though neither reference suggested the proposed modification.

The Patent Office paper described that this hypothetical rejection was improper because:

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The motivation, improve efficiency, is too general because it could cover almost any alteration contemplated of Reference A and does not address why this specific proposed modification would have been obvious. Additionally, there is nothing in either of references that would suggest automatically notifying the consumer when reaching a threshold nor is there anything in either reference that would suggest the notifying step. Finally, although Reference B teaches a traditional coupon scheme to promote customer loyalty, there is no suggestion, other than applicant's disclosure, to employ this scheme to promote the introduction of new and alternative products. The rejection is improper.

Likewise, in this situation, the Examiner has not cited any prior art that would suggest the claim requirement of having the client send the transform command as claimed. Further, the Examiner's proposed rationale is insufficient to justify the proposed modification to the prior art described in the Related Art section because the rationale does not compel one to make the proposed modification. Further, the Examiner rationale to improve "accuracy and reliability" and "provide an improved technique" could cover almost any alteration contemplated of the prior art transformation technique disclosed in the Related Art.

For all the above reasons, Applicants submit that independent claims 1, 9, and 17 are patentable over the cited art because the proposed modifications of the prior art disclosed in the Related Art are improper.

Claims 2-8, 10-16 and 26, and 18-25 are patentable over the cited art because they depend from claims 1, 9, and 17, respectively, which are patentable over the cited art for the reasons discussed above. Moreover, claims 2, 4, 6, 7, 8, 10, 12, 14, 15, 16, 18, 20, 21, 22, and 26 provide additional ground of patentability over the cited art.

Claims 2 and 10 depend from claims 1 and 9, respectively, and further require that the client is a client computer that communicates with the server over a network, wherein the transform command is transmitted from the client computer to the server over the network.

The Examiner cited page 3, lines 12-19 of the Related Art section as teaching the additional requirements of claims 2 and 10. (Office Action, pg. 4) Applicants traverse.

The cited page 3 of the Related Art discusses how the client accesses the data from the database and then the client performs the transformations on the data and returns the transformed data to the database server. Nowhere does the cited art teach or suggest that a client computer

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send a transform command to the server over the network to perform the transformations at the server as claimed. Accordingly, claims 2 and 10 provide additional grounds of patentability over the cited art.

Claims 4, 12, and 18 depend from claims 1, 9, and 17 and further require that the transform command rules specify multiple transform operations to perform on at least one cell in the accessed input table. An application of a subsequent transform operation following a previous transform operation on one cell transforms previously transformed data in the cell.

In rejecting claims 4, 12, and 18, the Examiner cited page 2, lines 12-14 and 27-28 of the Related Art. (Office Action, pgs. 4-5) The cited pg. 2, lines 12-14 discloses that transform operations may include conversions of one type of data to another to definition of new attributes. The cited pg. 2, lines 27-28 mentions that some current techniques for transforming data include the use of an SQL clause to limit the rows extracted from the source table.

Nowhere in these cited sections of the Related Art is there any suggestion of a transform command transmitted from the client to server that includes rules specifying multiple transform operations to perform. Instead, the cited Related Art concerns transform operations in general, and not through a transform command transferred from the client to server as claimed.

Accordingly, claims 4, 12, and 19 provide additional grounds of patentability over the cited art.

Claims 6, 14, and 20 depend from claims 5, 13, and 19, which require writing the transformed data do the database, and further require determining whether the transform command indicates an output table in the database. The transformed input table is written to the output table if the transform command indicates the output table and the input table in the database is updated with the transformed input table if the transform command does not indicate one output table. The Examiner cited page 2, lines 12-14 and page 3, lines 17-19 of the Related Art as teaching the additional requirements of claims 6, 14, and 20. (Office Action, pgs. 5-6) Applicants traverse.

The cited page 2, lines 12-14 of the Related Art mentions that data in selected database tables may be transformed. Page 3, lines 17-19 mentions that once the data is transformed at the

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client, the data is transferred to the database server to update the transformed table. However, claims 6, 14, and 20 require that the transform command may indicate an output table and writing the transformed input table to the output table if the output table is indicated. Nowhere does the cited Related Art teach or suggest the claim requirement that the transform command indicate an output table and writing the transformed input table to a different output table as claimed. Instead, the cited Related Art only discusses updating the database table that was transformed.

Accordingly, claims 6, 14, and 20 provide additional grounds of patentability over the cited art.

Claims 7, 15, and added claim 26 depend from claims 1, 9, and 17 and further require that the client cannot affect the execution of the transform command during the execution of the transform command, whereby the transform command executes in the server independently of the client. The Examiner cited page 3, lines 15-17 of the Related Art as teaching the additional requirements of claims 7 and 15. (Office Action, pg. 6) Applicants traverse.

The cited page 3 actually teaches away from the claim requirement that the client cannot affect the execution of the transform command during the execution of the transform because the cited page 3, lines 15-17 mentions that the client performs the transformation operation. If the client performs the transformation operation as the cited page 3 discloses, then the client would necessarily affect the execution of the transform command, which is the opposite of what is claimed – that the client not affect the execution of the transform command.

Accordingly, claims 7, 15, and added claim 26 provide additional grounds of patentability over the cited art.

Claims 8, 16, and 21 depend from claims 1, 9, and 17 and further require that the transform command further comprises multiple rules, wherein each rule specifies at least one column in the input table and at least one transform operation to perform on each specified column in the input table. At least two rules specify different columns in the input table and different transform operations to apply to each specified column. The Examiner cited page 3,

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lines 12-19 of the Related Art as teaching the additional requirements of claims 8, 16, and 21. (Office Action, pgs. 6-7) Applicants traverse.

The cited page 3, lines 12-19 of the Related Art discloses that current transform operations require that different transform application programs must be written for each table to transform and for different transform rules applied to the same table. Further, in the prior art, data in the database table is transferred from the database server to the client to transform. Nowhere does this cited section of the Related Art teach or suggest the client requirement of a transform command having multiple rules, where each rule specifies at least one column and at least one transform operation to perform.

In fact, the cited Related Art teaches away from the requirement of claims 8, 16, and 21 that a single transform command can include multiple rules providing different transform operations to perform on each specified column in the input table because the cited Related Art mentions that a separate transform application program must be written for different transform rules applied to the same table. The claims, on the other hand, require that multiple rules for different transform operations can be included in the same transform command sent from the client to server.

For these reasons, claims 8, 16, and 21 provide additional grounds of patentability over the cited art.

Claims 22-25 include many of the distinguishing requirements found in claims 1, 4, 6, and 8 in data structure format. Applicants amended claim 22 to include the requirement found in claim 1 that the transform command is transmitted from the server to client so that the server processes the command to transform data in the input table according to each rule in the transform command.

The Examiner cited the same sections cited against claim 1 in rejecting claim 22. (Office Action, pg. 8) Applicants submit that claim 22 is patentable over the cited art for the reasons discussed with respect to claims 1. Further, claims 23, 24, and 25 provide additional grounds of patentability over the cited art for the reasons discussed with respect to claims 4, 6, and 8, respectively.

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Conclusion

For all the above reasons, Applicant submits that the pending claims 1-26 are patentable over the art of record. Applicants submit herewith the fee for adding a claim. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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By: 

David W. Victor
Reg. No.: 39,867

Please direct all correspondences to:

David Victor
Konrad Raynes Victor & Mann, LLP
315 South Beverly Drive, Ste. 210
Beverly Hills, CA 90212
Tel: 310-553-7977
Fax: 310-556-7984

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph on page 1, lines 5-19 is amended as follows:

This application is related to the following co-pending and commonly-assigned patent applications, all of which are filed on the same date herewith, and which are incorporated herein by reference in their entirety:

"Method, System, Program, And Data Structure for Pivoting Columns in a Database Table," to Mark A. Cesare, Julie A. Jerves, and Richard H. Mandel III, and having [attorney docket number ST9-99-035] U.S. Application Serial No. 09/400,507;

"Method, System, Program, and Data Structure for Cleaning a Database Table," to Mark A. Cesare, Tom R. Christopher, Julie A. Jerves, Richard H. Mandel III, and having [attorney docket no. ST9-99-037] U.S. Application Serial No. 09/399,694;

"Method, System, and Program for Inverting Columns in a Database Table," to Mark A. Cesare, Julie A. Jerves, and Richard H. Mandel III, and having [attorney docket no. ST9-99-038] U.S. Application Serial No. 09/400,690; and

"Method, System, Program, And Data Structure For Cleaning a Database Table Using a Look-up Table," Mark A. Cesare, Julie A. Jerves, and Richard H. Mandel III, and [having attorney docket no. ST9-99-036] U.S. Application Serial No. 09/401,006.

The paragraph on page 2, line 23 through page 3, line 11 is amended as follows:

Data transformation refers to the process of filtering, merging, decoding, and translating source data to create validated data for the data warehouse and data mining tools. For example, a numeric regional code might be replaced with the name of the region. Data transformations [is] are used when data is inconsistent or incompatible between sources. Some of the current techniques for transforming data include the use of an SQL WHERE clause to limit the rows extracted from the source table. Further, formulas and expressions specified in the column definition window and constants and tokens are used to eliminate and modify data. Previous

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versions of IBM Visual Warehouse included programs to allow users to perform numerous functions on the source data. For instance, if one database table has revenue data in U.S. dollars and another data table stores revenue data in foreign currency denominations, then the foreign revenue data must be cleansed before both sets of data can be analyzed together. Transformation operations may be performed using client application programs external to the database program that process and transform tables of data records. Further details of data warehousing and data transforms, are described in the IBM publications "Managing Visual Warehouse, Version 3.1," IBM document no. GC26-8822-01 (IBM Copyright, January, 1998), which is incorporated herein by reference in its entirety.

The paragraph at page 3, lines 12-25 is amended as follows:

Current implementations of transform operations require writing a specific application [at] to implement a transform operation. Thus, different transform application programs must be written for each table to transform and for different transform rules applied to the same table. Further, in current implementations, the data in the database table is transferred from the database server to the client to perform the transformation operation on the data at the client. After the data is transformed at the client, the data must then be transferred to the database server to update the transformed table in the database. This process of transferring the data from the database between the client and server consumes substantial network bandwidth and server and client processing cycles. Moreover, with very large tables, comprising numerous columns and possibly millions or billions of records, the table is sometimes processed in parts, i.e., on a column-by-column basis. Thus, with current transform techniques, data is read and written between the client and database server over the network numerous times to accomplish the transformation of the data.

IN THE CLAIMS

Claim 22 is amended as follows:

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22. (Amended) A memory device including a command for performing a transform operation on a computer database input table, the command comprising
- an input data table name parameter indicating the input table subject to the transform operation; and
 - at least one rule indicating at least one cell in the input table to transform and a transform operation to perform with respect to the at least one cell, wherein the transform command is executed to access a copy of the input table from the database and transforming data in the accessed input table according to each rule specified in the transform command, wherein the command is transmitted from a client to a server, and wherein the server processes the command to transform data in the input table according to each rule in the transform command.

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